UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/443,692	11/19/1999	TAKESHI ANDO	13191	7589

23389   7590   08/24/2004

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EXAMINER
LEE, TIMOTHY L

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/443,692	ANDO, TAKESHI
	Examiner	Art Unit
	Timothy Lee	2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 June 2004*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,3,5,8 and 10* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,3,5,8 and 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 2, 3, 5, 8, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated

by Tiedemann, Jr. et al. (US 5,914,950), hereinafter referred to as Tiedemann.

3.   Regarding claims 2 and 10, Tiedemann discloses a communication system

capable of variable rate transmission. Remote station 6 from Fig. 1 initiates high speed

data transmission on the reverse link by requesting permission from channel scheduler 12

(receiving a transmission demand from each of a plurality of mobile station at a base

station). See col. 6, lines 40-42. As shown in Fig. 2, the channel scheduler 12 connects

to all selector elements within the base station controller 10. See col. 7, lines 27-39. The

channel scheduler is also able to schedule the information so that data can travel at that

particular rate a predetermined number of frames later (determining a maximum

transmission rate for a next schedule transmission time slot...). See col. 9, lines 47-51.

The maximum transmission rate is found based on a number of factors. One of the

factors includes the frame error rate (based directly on...a transmission error rate). See

col. 18, lines 10-30. For example, the channel scheduler can assign lower transmission

rates to remote stations if the FER is above a predetermined threshold. See col. 16, lines

33-43. Tiedemann also discloses the use of CRC bits for detection of frame error (error

rate determined via a CRC for each mobile station). See col. 27, line 62-col. 28, line 6.

Tiedemann discloses that the data transmission rate is also affected by the channel

condition (taking account of radio wave propagation condition). See col. 19, lines 17-19,

and col. 20, lines 19-26. Tiedemann discloses that the data queue size is also taken into

consideration in assigning the maximum transmission rate. It follows logically that a

bigger data size will relate to a bigger queue size (taking account...a data size associated

with each said transmission demand). See at least col. 21, lines 48-67. Priority order can

also be established after taking various factors into account. See col. 32, lines 13-16.

Again, the amount of data to be transmitted is a factor in the discussion involving priority

assignment (determining a priority order...based on the data size). See col. 32, lines 48-

65. Tiedemann also discloses that priority can be assigned based on the frame error rate

(determining priority order...based on...the transmission error rate). See col. 33, line 58-

col. 34, line 13. Channel conditions can also play a role in priority, where a remote

station can be temporarily be placed on hold until channel conditions improve, so it

would have a very low priority of transmission (determining a priority order...based on

the radio wave propagation condition). See col. 33, lines 23-26. After processing the

collected information, channel scheduler 12 assigns the maximum scheduled transmission

rate that can be used by each remote station 6 for high speed data transmission over the

reverse link (notifying each said mobile station of said maximum transmission rate

determined at said base station).

4.   Regarding claim 3, the channel scheduler can wait until the next scheduling

period and assigns a new rate based on the newly collected information. In this manner,

the maximum rate can be variable (variably changing a transmission rate according to the

maximum rate). See Fig. 7, and col. 9, lines 24-54.

5.   Regarding claim 5, as mentioned previously, the system can use the FER

information to determine the condition of a transmission path. For example, if the there

is a repeated frame error, then this can indicate that the reverse link is impaired (a

transmission condition detecting means...detecting its error rate). As mentioned

previously, the mobile stations can demand up to a maximum rate, or less depending on

what the mobile station requires. The system uses collected information to determine the

rate needed by each channel (transmission rate detecting means), and it assigns a

maximum rate based on this information (a maximum rate control information

determining means). See Fig. 7, and col. 9, lines 24-54. The channel scheduler is

responsible for sending the maximum rate information (notifying said mobile station of

said maximum rate). See Fig. 7, and col. 9, lines 47-49.

6.   Regarding claim 8, at a base station 4, the reverse link signal is received by

antenna 44 and provided to RF unit 42. RF unit 42 filters, amplifies, downconverts, and

quantizes the reverse link signal and provides the digitized signal to channel element 40.

Channel element 40 demodulates the digitized baseband signal, the inverse of the signal

processing functions done at remote station 6 (a demodulation device). See col. 7, lines

9-26. The scheduling system disclosed in Tiedemann can be applied to any

communication system capable of variable rate communication—high speed data

transmission occurs over a single variable rate channel (variable rate communication

path). Based on collected information and system goals, the channel scheduler assigns

the maximum transmission rate—some of this collected data and system goals can

include channel condition and a priority list of required performance (determining

maximum rate by taking account of radio wave propagation condition; a maximum rate

control). See col. 19, lines 14-29, and col. 18, lines 24-30. The system uses collected

information to determine the rate needed by each channel (transmission rate detecting

means). As mentioned previously, the FER can be used when deciding on the

transmission rate (detecting its error ratio).

Response to Arguments

7.   Applicant's arguments filed June 4, 2004 have been fully considered but they are

not persuasive.

8.   In response to Applicant's argument that Tiedemann does not disclose scheduling

its rate on the reverse link based directly on the transmission error rate, the Examiner

respectfully disagrees. Applicant focuses on equations 6 and 7 found in col. 18 of

Tiedemann to argue that the maximum transmission rate is not based directly on frame

error rate (FER). Specifically, because the equations show that Eb, not FER, is used in

the equation to find the maximum rate, Applicant argues that this is not a <u>direct</u>

relationship. The Examiner, however, still contends that there is a direct relationship

between the maximum rate and the FER. If there is a change in FER, this change will

<u>directly</u> affect the maximum rate as calculated in equation 7; this is a necessary

consequence of a change in FER. The breaking up of the calculation of the maximum

rate into steps by Tiedemann does not in any way demonstrate that there is no direct

relationship between FER and the maximum transmission rate. Because the maximum

rate is directly based on the FER, the Examiner believes that the rejection remains proper.

9.   In response to Applicant's argument that Tiedemann dose not disclose

determining the maximum rate for a next scheduled transmission time slot, the Examiner

respectfully disagrees. Applicant cites col. 16, lines 33-39 of Tiedemann, which states

that the cell "can temporarily assign lower transmission rates to remote stations...without

having to wait for the next scheduling," as proof that Tiedemann only discloses

scheduling on a temporary bases as a opposed to a basis where maximum transmission

rates are scheduled for a next time slot. This quote, however, only represents a small

portion of the scheduling capabilities disclosed by Tiedemann. Read in light of the entire

disclosure, this quoted section is supposed to highlight an extra capability that the

invention possesses, in addition to its regular scheduling capabilities. For example,

Tiedemann discloses that after the maximum transmission rate has been calculated, the

data can be sent at that rate a "predetermined number of frames later." See col. 9, lines

47-54. Additionally, Tiedemann discloses that the rate scheduling can be "performed

continuously, periodically, or in a staggered fashion." See col. 12, lines 56-58. This

indicates that the quoted section from above only considers one facet of the whole

invention. Because Tiedemann discloses scheduling for a next transmission slot, the

Examiner believes the rejection remains proper.

Conclusion

10.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than

SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Timothy Lee whose telephone number is (703)305-7349.

The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on (703)305-4744. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

TLL
Timothy Lee
August 9, 2004

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